

Message Text

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C O N F I D E N T I A L MOSCOW 4211

E.O. 11652: GDS
TAGS: UR, PARM, SCI
SUBJECT: SOVIETS ON FAST BREEDER REACTORS

REF: (A) STATE 67973, (B) MOSCOW 4082

1. SUMMARY. MARCH 27 PRAVDA ARTICLE BY KAZACHKOVSKIY AND
MARCH 28 REMARKS TO HARTMAN BY DEPUTY DIRECTOR STATE COMMITTEE
FOR ATOMIC ENERGY MOROKHOV CONFIRM SOVIET POLICY TO BE A
COMMITMENT TO RAPID FAST BREEDER DEVELOPMENT. END SUMMARY.

2. MARCH 27 PRAVDA CARRIES ARTICLE BY LENIN PRIZE LAUREATE
O. KAZACHKOVSKIY, DIRECTOR OF OBNINSK PHYSICAL ENERGY INSTITUTE,
ADVOCATING RAPID, SERIES PRODUCTION OF FAST BREEDER REACTORS
AND REPROCESSING CAPABILITIES. KAZACHKOVSKIY MAKES NO REFERENCE
TO NON-PROLIFERATION CONNECTION AND, INDEED, CALLS FOR PARTICI-
PATION OF SPECIALISTS FROM COMECON COUNTRIES IN TESTING OF
REQUIRED EQUIPMENT.

3. KAZACHKOVSKIY SUGGESTS THAT SOVIETS MAY FACE SHORTAGE
OF PLUTONIUM AND FERTILE MATERIALS, POSSIBLY FOR OWN OR
OVERSEAS ENERGY RELATED SALES NEEDS. HE NOTES THAT BREEDERS
EXPAND TOTAL FUEL SUPPLY WHICH, AFTER REPROCESSING, CAN AND
"SHOULD" BE USED FOR FUELING NEWLY INTRODUCED FAST BREEDERS.
HE STATES THAT "AN EXTREMELY SIGNIFICANT INDICATOR IN CONNECTION
WITH THIS IS THE RATE OF GROWTH OF FUEL WHICH DETERMINES THE
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POSSIBLE EXPANSION OF THE NUMBER OF ENERGY FAST BREEDERS.
THIS RATE IS NOT RPT NOT LIMITLESS. FROM THIS FLOWS AN IMPORTANT
CONCLUSION -- WE CANNOT DELAY BEGINNING WIDESPREAD CONSTRUCTION
OF FAST REACTORS. OTHERWISE, IT WILL SIMPLY NOT BE POSSIBLE TO
DEVELOP THEIR CAPABILITIES TO THE NEEDED LEVEL."

4. KAZACHKOVSKIY NOTES THAT SOVIETS HAVE HAD TROUBLE DEVELOPING

SUITABLE STEAM GENERATOR FOR FAST BREEDER. HE SAYS THAT THERE ARE POSSIBILITIES FOR SOLVING THIS PROBLEM THROUGH USE OF BETTER CONSTRUCTION TECHNIQUES AND MATERIALS. COMMENT: ERDA HAS AGREED TO STUDY THE POSSIBILITY OF A LOAN OF A CLINCH RIVER TYPE STEAM GENERATOR TO BE INSTALLED AT THE SHEVCHENKO FAST BREEDER UNDER THE US/USSR ATOMIC ENERGY BILATERAL AGREEMENT (SEE MOSCOW 4082).

5. KAZACHKOVSKIY ALSO ACKNOWLEDGES THAT, DESPITE LOW FUEL COSTS, TOTAL COST FOR FAST BREEDER POWER GENERATION EXCEED THAT OF THERMAL REACTORS. HE CLAIMS, HOWEVER, THAT THIS PROBLEM WILL BE OVERCOME IF POWER CAPABILITIES OF FAST BREEDERS CAN BE INCREASED IN COMPARISON TO THERMAL REACTORS BY AN ADDITIONAL THIRTY PERCENT. HE SAYS THIS TASK IS FULLY REALIZABLE.

6. KAZACHKOVSKIY DEFINES CURRENT SOVIET PRIORITY GOALS AS CONSTRUCTION OF RELIABLE STEAM GENERATOR, MAINTENANCE OF HIGH EFFICIENCY OPERATIONS OF SHEVCHENKO FAST BREEDER, COMPLETION OF 600 MEGAWATT BELOYARSK FAST BREEDER POWER STATION, ACCELERATION OF WORK TOWARD MASS PRODUCTION OF 1600 MEGAWATT FAST BREEDERS, AND CREATION OF HIGH EFFICIENCY AUTOMATED FUEL REPROCESSING AND FABRICATION FACILITIES.

7. REMARKS MADE BY DEPUTY CHAIRMAN OF STATE COMMITTEE FOR ATOMIC ENERGY I.D. MOROKHOV TO ASSISTANT SECRETARY HARTMAN, MARCH 28 AND SUPPLEMENTED IN SECOND CONVERSATION WITH POL COUNS MARCH 29 CONFIRM THAT KAZACHKOVSKIY'S ARTICLE IS AUTHORITATIVE. "IT IS A STATEMENT OF THE TECHNICAL POLICY OF THE USSR IN THE FIELD OF ATOMIC ENERGY," MOROKHOV SAID IN THE MARCH 29 MEETING. THIS COURSE, HE EMPHASIZED, IS THE "MAIN ROAD" TO MEETING USSR CONFIDENTIAL

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ENERGY NEEDS FOR THE FUTURE.

8. MOROKHOV DENIED THAT THERE IS ANY PRESENT NUCLEAR FUEL SHORTAGE IN THE USSR OR IN THE WORLD. BUT HE POINTED OUT THAT SOVIET STUDIES PROJECT THAT, ON THE BASIS OF CURRENT USE AND ANTICIPATED RATE OF GROWTH OF NUCLEAR REACTOR USE, THE "ONLY SOLUTION" IS BREEDING. THIS EVALUATION, HE SAID, DOES NOT TAKE INTO ACCOUNT POSSIBLE CONTROLLED FUSION PROCESSES, SINCE THIS WILL NOT BE WITHIN THE REALM OF POSSIBILITY FOR THE NEXT 20 YEARS. (IN THIS CONNECTION, HE MENTIONED THAT HYBRID REACTORS WERE POSSIBLE, BUT WOULD INTRODUCE PLUTONIUM INTO THE CYCLE ANYWAY.) HENCE, SINCE BY THE YEAR 2000 OR 2010 WE WILL, IN MOROKHOV'S OPINION, "HAVE A FUEL SHORTAGE," THE SOLUTION IS FAST BREEDERS WHICH WITH EXPERIENCE, HE THINKS, CAN BE MADE SAFE AND RELIABLE IN OPERATION. HE RECOGNIZED THAT WITH THIS COURSE, THE PROBLEM OF REPROCESSING WOULD CONTINUE TO EXIST, BUT HE ESTIMATES THAT THE PROBLEM WOULD ONLY BE ABOUT "ONE ORDER" OF MAGNITUDE ABOVE THE CURRENT PROBLEM IN THIS REGARD.

9. COMMENT: DURING U.S./USSR FISSION/FUSION SEMINAR IN MOSCOW LAST WEEK, U.S. PARTICIPANTS REPORTED THAT SOVIET URANIUM SUPPLY/DEMAND PROJECTIONS WERE CAST IN OVERALL WORLD, RATHER THAN NATIONAL, TERMS. WHILE THIS MAY HAVE BEEN DUE, AT LEAST IN PART, TO SECURITY CONSIDERATIONS, THE SOVIETS HAVE ASPIRATIONS TO BECOME MAJOR SUPPLIER OF NUCLEAR REACTORS AND ENERGY TO THEIR CEMA PARTNERS AND THE THIRD WORLD (E.G., THE RECENT REACTOR SALE TO LIBYA.) THEY MAY ALSO BE INTERESTED IN SALES TO THE WEST, POSSIBLY INCLUDING ELECTRIC POWER, TO OFFSET HARD CURRENCY DEFICITS AND TO TAKE UP AFTER PETROLEUM EXPORT CAPABILITY IS EXHAUSTED.

10. SOVIET INTEREST IN BREEDING IS NOT ONLY RESTRICTED TO FAST BREEDERS. THEY SEEM TO HAVE MADE A FIRM COMMITMENT TO HYBRID BREEDERS IN THEIR FUSION PROGRAM. THE SOVIETS HAVE RECENTLY ESTIMATED THAT A COMMERCIALY FEASIBLE FUSION HYBRID COULD BE MADE AVAILABLE BEFORE THE TURN OF THE CENTURY. (THEY ARE CONFIDENTIAL

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PESSIMISTIC ABOUT A PURE FUSION REACTOR.) THEY HAVE A HIGH INTEREST IN COOPERATION ON HYBRID BLANKET RESEARCH WITH THE ELECTRIC POWER RESEARCH INSTITUTE, A U.S. PRIVATE UTILITY GROUP. TOON

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